

0310 0420 12/31/2001

Serial Number: 10/005,216

ENTERED

CRF Processing Date

Edited by:

Verified by:

(STIC sta

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEO ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEO ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☐ Other: _____

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/005,216

DATE: 12/31/2001

TIME: 18:43:02

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\12312001\J005216.raw

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4 <110> APPLICANT: Allen, Keith D.
5 <120> TITLE OF INVENTION: TRANSGENIC MICE CONTAINING CALCIUM ION
6 CHANNEL (Trp6) GENE DISRUPTIONS
7
10 <130> FILE REFERENCE: R-881
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/005,216
C--> 12 <141> CURRENT FILING DATE: 2001-12-04
12 <150> PRIOR APPLICATION NUMBER: US 60/280,373
13 <151> PRIOR FILING DATE: 2001-03-29
15 <150> PRIOR APPLICATION NUMBER: US 60/255,227
16 <151> PRIOR FILING DATE: 2000-12-11
18 <160> NUMBER OF SEQ ID NOS: 4
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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23 <211> LENGTH: 3261
24 <212> TYPE: DNA
25 <213> ORGANISM: Mus musculus
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29 ggtcaagggtt cctttcggcg ctgtctccca agccctaac tagtgacttc cactgtggcg 120
30 ggcagggaag ccattggcag aacctagcca gtcaggaaac tgcctctctt ccttcattat 180
31 cctctccctg gcattgcttt gctcgggtcc agctcagttg gtgacgcggc ccttctccc 240
32 cagggttggga tccacggaag caggggtgca ggcgggccag gcactgtgcc atgagccaga 300
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38 cagttgaata tggcaacatc ccagtgggtt ggaagatgct agaagagtgt cattccctca 660
39 atgttaactg tgtggattac atgggcccaga atgccctaca gctggctgtg gccaatgagc 720
40 acttggaatc cacagagctg ctactcaaga aggaaaactt gtctcgagtt ggggatgctt 780
41 tacttttagc cattagtaaa gggtatgtac qgattgtgga ggcaatcctc aaccatccat 840
42 cttttgctga aggcaaaagg tttagcagaa gccccagcca gctgaactt cagcaagatg 900
43 acttttatgc ctatgatgaa gatgggaacg ggttctccca tgatgtgact ccaatcattc 960
44 tgcctgcaca ttgccaggaa tatgaaattg tgcataccct cctgagaaag ggtgcccgga 1020
45 ttgagcggcc tcatgattac ttctgcaagt gtacagaatg cagccagaag cagaagcatg 1080
46 attccttcag ccactctaga tccaggatca atgcatacaa aggtctggca agtccagcat 1140
47 acctgtcatt gtccagtga gatccagtc tgaactgctt agaacttagc aatgagctgg 1200
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49 gcaaggattt cgttggttgg ctcttggaac tctgcagaaa cacagaggaa gtggaggcca 1320
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52 aacagctcct gtccatattg tatgagaacc tctctggttt acggcagcag accatggcag 1500
53 tgaagtctct cgtggtcctt gctgttgcca ttggattgcc ctctctggt ctcatatact 1560
54 ggtgtgctcc ttgcagcaag atggggaaga tattgccgag accgttcatg aagttttag 1620
55 cacacgcagc ctcttcacc attttcctgg gctgtctcgt catgaatgca gctgacagat 1680
56 ttgaaggcac caagctctc cctaatgaaa ccagcacaga taatgcaagg cagctgttca 1740
57 ggatgaaaac atcctgtttc tcatggatgg agatgctcat tatatcctgg gtaataggca 1800

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58 tgatatgggc tgaatgtaaa gaaatctgga ctcaaggccc caaagaatac ttatttgagt 1860
59 tgtggaatat gcttgacttt ggaatgctgg caatctttgc agcatcatto attgcaagat 1920
60 ttatggcggt ctggcatgca tccaaagctc agagcatcat tgatgcaaat gatactttaa 1980
61 aggatttgac aaaagtcaca ctggggggaca acgttaaata ctacaatctg gccaggataa 2040
62 agtgggaccc tactgatcct cagatcatct ctgaagggtt ttatgcaatc gctgtggttt 2100
63 taagtttctc cagaatagct tacattttac cagcaaatga aagctttgga cctctgcaga 2160
64 tttaacttgg aagaacagtg aaagatatct tcaaattcat ggtcatatto atcatggtgt 2220
65 ttgtagcctt tatgattgga atgttcaacc tttaactcta ctacattggc gcaaaacaga 2280
66 atgaagcatt cacaacagtt gaggaaggtt ttaagacact gttctgggct atctttgggc 2340
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69 ccatgatcaa tagtcatto caggaaattg aggatgatgc ggacgtggag tggaggtttg 2520
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72 gtgagctcat ccagggtcaa aagcaaggct tccaagaaga tgcagagatg aacaagagaa 2700
73 atgaagaaaa gaaatttgga atttcaggaa gtcacgaaga cctttcaaaa ttttcaattg 2760
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76 gatattgatt gcaggcccag attgataagg agagcgatga ggtgaatgaa ggggaattga 2940
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78 actcagaaga cctagcagag ctcatagaa aactcgggga gagactgtcg ttagagccaa 3060
79 agctggagga aagccgcaga tagagcagag cccctcagaa gtgcataatt atttctccac 3120
80 ttgaagccat attattttct gacttatttt tttaagtgtc aatgataaaa agtatgttaa 3180
81 ctgataactt gcatcattta gagtccctaat atcaagcttt ttgggagatt aaattgcatt 3240
82 gctgaggggt aacaattgct g
3261

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84 <210> SEQ ID NO: 2

85 <211> LENGTH: 930

86 <212> TYPE: PRI

87 <213> ORGANISM: Mus musculus

89 <400> SEQUENCE: 2

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91 1 5 10 15
92 Ala Ala Pro Gly Ala Gly Thr Arg Arg Asn Glu Ser Gln Asp Tyr Leu
93 20 25 30
94 Leu Met Asp Glu Leu Gly Asp Asp Gly Tyr Pro Gln Leu Pro Leu Pro
95 35 40 45
96 Pro Tyr Gly Tyr Tyr Pro Ser Phe Arg Gly Asn Glu Asn Arg Leu Thr
97 50 55 60
98 His Arg Arg Gln Thr Ile Leu Arg Glu Lys Gly Arg Arg Leu Ala Asn
99 65 70 75 80
100 Arg Gly Pro Ala Tyr Met Phe Asn Asp His Ser Thr Ser Leu Ser Ile
101 85 90 95
102 Glu Glu Glu Arg Phe Leu Asp Ala Val Glu Tyr Gly Asn Ile Pro Val
103 100 105 110
104 Val Trp Lys Met Leu Glu Glu Cys His Ser Leu Asn Val Asn Cys Val
105 115 120 125
106 Asp Tyr Met Gly Gln Asn Ala Leu Gln Leu Ala Val Ala Asn Glu His
107 130 135 140
108 Leu Glu Ile Thr Glu Leu Leu Leu Lys Lys Glu Asn Leu Ser Arg Val

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109	145					150				155					160	
110	Gly	Asp	Ala	Leu	Leu	Leu	Ala	Ile	Ser	Lys	Gly	Tyr	Val	Arg	Ile	Val
111					165					170					175	
112	Glu	Ala	Ile	Leu	Asn	His	Pro	Ser	Phe	Ala	Glu	Gly	Lys	Arg	Leu	Ala
113				180					185					190		
114	Thr	Ser	Pro	Ser	Gln	Ser	Glu	Leu	Gln	Gln	Asp	Asp	Phe	Tyr	Ala	Tyr
115			195					200					205			
116	Asp	Glu	Asp	Gly	Thr	Arg	Phe	Ser	His	Asp	Val	Thr	Pro	Ile	Ile	Leu
117		210					215					220				
118	Ala	Ala	His	Cys	Gln	Glu	Tyr	Glu	Ile	Val	His	Thr	Leu	Leu	Arg	Lys
119	225				230					235					240	
120	Gly	Ala	Arg	Ile	Glu	Arg	Pro	His	Asp	Tyr	Phe	Cys	Lys	Cys	Thr	Glu
121				245					250					255		
122	Cys	Ser	Gln	Lys	Gln	Lys	His	Asp	Ser	Phe	Ser	His	Ser	Arg	Ser	Arg
123			260					265						270		
124	Ile	Asn	Ala	Tyr	Lys	Gly	Leu	Ala	Ser	Pro	Ala	Tyr	Leu	Ser	Leu	Ser
125		275					280					285				
126	Ser	Glu	Asp	Pro	Val	Met	Thr	Ala	Leu	Glu	Leu	Ser	Asn	Glu	Leu	Ala
127		290					295					300				
128	Val	Leu	Ala	Asn	Ile	Glu	Lys	Glu	Phe	Lys	Asn	Asp	Tyr	Arg	Lys	Leu
129	305				310				315						320	
130	Ser	Met	Gln	Cys	Lys	Asp	Phe	Val	Val	Gly	Leu	Leu	Asp	Leu	Cys	Arg
131				325					330					335		
132	Asn	Thr	Glu	Glu	Val	Glu	Ala	Ile	Leu	Asn	Gly	Asp	Ala	Glu	Thr	Arg
133			340						345					350		
134	Gln	Pro	Gly	Asp	Phe	Gly	Arg	Pro	Asn	Leu	Ser	Arg	Leu	Lys	Leu	Ala
135		355					360					365				
136	Ile	Lys	Asp	Glu	Val	Lys	Lys	Phe	Val	Ala	His	Pro	Asn	Cys	Gln	Gln
137		370					375					380				
138	Gln	Leu	Leu	Ser	Ile	Trp	Tyr	Glu	Asn	Leu	Ser	Gly	Leu	Arg	Gln	Gln
139	385				390					395					400	
140	Thr	Met	Ala	Val	Lys	Phe	Leu	Val	Val	Leu	Ala	Val	Ala	Ile	Gly	Leu
141			405						410					415		
142	Pro	Phe	Leu	Ala	Leu	Ile	Tyr	Trp	Cys	Ala	Pro	Cys	Ser	Lys	Met	Gly
143			420						425					430		
144	Lys	Ile	Leu	Pro	Arg	Pro	Phe	Met	Lys	Phe	Val	Ala	His	Ala	Ala	Ser
145		435					440					445				
146	Phe	Thr	Ile	Phe	Leu	Gly	Leu	Leu	Val	Met	Asn	Ala	Ala	Asp	Arg	Phe
147		450					455					460				
148	Glu	Gly	Thr	Lys	Leu	Leu	Pro	Asn	Glu	Thr	Ser	Thr	Asp	Asn	Ala	Arg
149	465				470					475					480	
150	Gln	Leu	Phe	Arg	Met	Lys	Thr	Ser	Cys	Phe	Ser	Trp	Met	Glu	Met	Leu
151				485					490					495		
152	Ile	Ile	Ser	Trp	Val	Ile	Gly	Met	Ile	Trp	Ala	Glu	Cys	Lys	Glu	Ile
153			500						505					510		
154	Trp	Thr	Gln	Gly	Pro	Lys	Glu	Tyr	Leu	Phe	Glu	Leu	Trp	Asn	Met	Leu
155		515					520					525				
156	Asp	Phe	Gly	Met	Leu	Ala	Ile	Phe	Ala	Ala	Ser	Phe	Ile	Ala	Arg	Phe
157		530				535					540					

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158 Met Ala Phe Trp His Ala Ser Lys Ala Gln Ser Ile Ile Asp Ala Asn
159 545                               550                               555                               560
160 Asp Thr Leu Lys Asp Leu Thr Lys Val Thr Leu Gly Asp Asn Val Lys
161                               565                               570                               575
162 Tyr Tyr Asn Leu Ala Arg Ile Lys Trp Asp Pro Thr Asp Pro Gln Ile
163                               580                               585                               590
164 Ile Ser Glu Gly Leu Tyr Ala Ile Ala Val Val Leu Ser Phe Ser Arg
165                               595                               600                               605
166 Ile Ala Tyr Ile Leu Pro Ala Asn Glu Ser Phe Gly Pro Leu Gln Ile
167                               610                               615                               620
168 Ser Leu Gly Arg Thr Val Lys Asp Ile Phe Lys Phe Met Val Ile Phe
169 625                               630                               635                               640
170 Ile Met Val Phe Val Ala Phe Met Ile Gly Met Phe Asn Leu Tyr Ser
171                               645                               650                               655
172 Tyr Tyr Ile Gly Ala Lys Gln Asn Glu Ala Phe Thr Thr Val Glu Glu
173                               660                               665                               670
174 Ser Phe Lys Thr Leu Phe Trp Ala Ile Phe Gly Leu Ser Glu Val Lys
175                               675                               680                               685
176 Ser Val Val Ile Asn Tyr Asn His Lys Phe Ile Glu Asn Ile Gly Tyr
177                               690                               695                               700
178 Val Leu Tyr Gly Val Tyr Asn Val Thr Met Val Ile Val Leu Leu Asn
179 705                               710                               715                               720
180 Met Leu Ile Ala Met Ile Asn Ser Ser Phe Gln Glu Ile Glu Asp Asp
181                               725                               730                               735
182 Ala Asp Val Glu Trp Lys Phe Ala Arg Ala Lys Leu Trp Phe Ser Tyr
183                               740                               745                               750
184 Phe Glu Glu Gly Arg Thr Leu Pro Val Pro Phe Asn Leu Val Pro Ser
185                               755                               760                               765
186 Pro Lys Ser Leu Leu Tyr Leu Leu Leu Lys Phe Lys Lys Trp Met Cys
187                               770                               775                               780
188 Glu Leu Ile Gln Gly Gln Lys Gln Gly Phe Gln Glu Asp Ala Glu Met
189 785                               790                               795                               800
190 Asn Lys Arg Asn Glu Glu Lys Lys Phe Gly Ile Ser Gly Ser His Glu
191                               805                               810                               815
192 Asp Leu Ser Lys Phe Ser Leu Asp Lys Asn Gln Leu Ala His Asn Lys
193                               820                               825                               830
194 Gln Ser Ser Thr Arg Ser Ser Glu Asp Tyr His Leu Asn Ser Phe Ser
195                               835                               840                               845
196 Asn Pro Pro Arg Gln Tyr Gln Lys Ile Met Lys Arg Leu Ile Lys Arg
197                               850                               855                               860
198 Tyr Val Leu Gln Ala Gln Ile Asp Lys Glu Ser Asp Glu Val Asn Glu
199 865                               870                               875                               880
200 Gly Glu Leu Lys Glu Ile Lys Gln Asp Ile Ser Ser Leu Arg Tyr Glu
201                               885                               890                               895
202 Leu Leu Glu Glu Lys Ser Gln Asn Ser Glu Asp Leu Ala Glu Leu Ile
203                               900                               905                               910
204 Arg Lys Leu Gly Glu Arg Leu Ser Leu Glu Pro Lys Leu Glu Glu Ser
205                               915                               920                               925
206 Arg Arg

```

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Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\12312001\J005216.raw

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210 <210> SEQ ID NO: 3
211 <211> LENGTH: 200
212 <212> TYPE: DNA
213 <213> ORGANISM: Artificial Sequence
215 <220> FEATURE:
216 <223> OTHER INFORMATION: Targeting vector
218 <400> SEQUENCE: 3
219 tcttcaattc taactgcatt tcttctggaa aagaataaaa cgattcacca gagctccaga 60
220 gqatagecta agctgagttg tttttaatca aatcattctg tgtgctgtct caccctagt 120
221 ttgtgctca tccaagctgt cagcaacagc tctgtccat atggtatgag aacctctctg 180
222 gtttacggca gcagaccatg                               200
224 <210> SEQ ID NO: 4
225 <211> LENGTH: 200
226 <212> TYPE: DNA
227 <213> ORGANISM: Artificial Sequence
229 <220> FEATURE:
230 <223> OTHER INFORMATION: Targeting vector
232 <400> SEQUENCE: 4
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234 cttagcagca ggtatgtctg tgagtcctgc agtccatctg tagttgaatt ctgtccagca 120
235 ggcaaagatc tagctccaaa atgaaaatat gatttgaagt acacagggtc acataatctt 180
236 tctatttggt tgagaatttc                               200

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/005,216

DATE: 12/31/2001

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Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\12312001\J005216.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date